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Date: September 30, 2022

To: The City of Mercer Island Department of Community Planning and Development

From: Lucia Pirzio-Biroli, AIA

Memo: Project 2202-225 Sub 2 - Ancillary comments

This memo is intended to clarify certain site conditions, design changes and submitted documentation that can't clearly be stated in the drawings.

Please refer to the Critical Area Report entitled **CAO22-006-SUB2 Report** for additional information regarding the approach to site development.

Please refer to the **Geotechnical Review of Plans** dated 9/29/2022 for any additional supporting comments and statement of risk.

Recorded Documents: Three documents are complete and will be notarized and recorded by the time the permit is finalized. They include: The ADU Affidavit; Notice on title of Critical Areas; and Large Lot Limit of Division.

The revised and updated **Arborist Report** will be deferred until completed and will be submitted as soon as it is ready.

Site: Due to its nature as a Critical Area and with a steep slope aspect, the site has come under intense scrutiny by both our design team and the City of Mercer Island Department of Community Planning and Development. The overall proposed project assumes the worst-case scenario and will, when adhered to the Geotechnical Engineer's recommended design and construction practices, "…*render the development as safe as if it were not located in a geologically hazardous area and will not cause adverse geotechnical impacts to the adjacent properties*[1]*."*

In addition to achieving desirable foundation bearing, the site needs additional excavation to achieve the required maximum 20% grade for driveway by the Mercer Island Fire Department. This has resulted in structure that is deeply embedded in the site and consequential site retaining.

Nail Shoring: In the original geotechnical study dated 3/23/21, temporary soldier pile system was recommended for shoring. Once design was underway and the General Contractor

[1] Pg 4 - Geotech Consultants - Geotechnical Study of Site dated 3/23/2021

expressed concern about site access, however, the Geotechnical Engineer recommended the use of nail shoring.

In the original submittal the nail shoring design was a deferred submittal. It has been included in this submittal and adjustments to the site design have been made as questions were uncovered during its design.

The drawings are series "SH". The nail shoring design assumes all shoring is PERMANENT. It is designed to find synergies between the site and building construction, eliminating to the greatest extent redundancies in retaining walls. The nail shoring, grading and foundation work are broken into two phases: Phase 1 addresses work done above the main nail shoring wall and is intended so work can be executed, and heavy machinery removed from above so as to not impact the long primary shoring wall below. Exposed walls will have a float shot-crete finish.

Foundation Grading: Sheet A1.4 has been added to the set. It shows how TEMPORARY grading is expected to be executed for foundation placement. The drawing shows a couple of areas where temporary grading will need to be sloped per geotechnical recommendations. For the most part, however, cuts will be vertical with either nail shoring or temporary use of eco-blocks to retain soil. Erosion protections as outlined in the Civil C2 TESC sheet will be implemented. The final grading will be executed as construction permits.

Civil Drawings: Called out in the Geotech memo is a conflict between one of the catch basins in the auto court and retaining wall foundations. Also in the Geotech memo is a recommendation that both catch basins be backfilled with lean-mix concrete. The Civil Engineer has been made aware of these issues. He is currently out of the country and unable to make the change now but has said the catch basin is easily moved and will make these changes to his documentation on his return in mid-October.

Site Walls: Some site walls have been revised from the original design. Above the primary nail shoring wall the small retaining walls intended to ease grading have been reduce to a single cast in place wall well off the property line. Additionally in this area the phase 1 nail shoring was extended from patio to the west. Again this is intended to ease grading of the site to meet the geotechnical requirements.

There are 3 types of retaining walls on site all of which meet geotechnical and structural requirements: A cast in place wall occurs, as noted, above the primary nail shoring. Additionally there are some exposed nail shoring walls which will be finished with a float shot-crete finish. Along the southeast side of driveway, a shot-crete wall meeting geotechnical and structural requirements is intended to achieve the radius curve. Again this will be a float shot-

crete finish. Cast in place walls acting as planters occur around the auto court area to mitigate the height of required cuts. Detail 12/S3.0 is a schedule for all site wall criteria.

Trees: All information about trees is on a dedicated "tree" plan – AR-1 developed by our Arborist. It is not part of the Civil set as the Civil Engineer is reluctant to include any work in his drawings that he is not responsible for. Including the Arborist's drawing in the set is more consistent, and ultimately more accurate in that the same drawing is part of the Arborist's report and there is reduced risk in transcription. The Arborist is out now and can't get the report to us in time for submission. We will submit it as soon as it is ready as a deferred submittal. In the meantime, all information about site trees is in the drawing set.

Architectural changes to original set: There have been 3 primary changes to the architectural design that have led to other changes. They are outlined below.

Stair: Stairs from the entry to the upper floor have been entirely revised to be open and located entirely in the main body. This forced a reconfiguration of the garage creating an enclosed storage area; it necessitated enlarging the "Lounge Area" to allow access to the utility chase behind the elevator; with the new stair configuration, the "Crow's Nest" in the master bedroom has been eliminated.

Finish floor at the Entry/ADU: The finish floor in this area has been lowered about 18 inches to allow for an 8'-6" ceiling height in the ADU and positive flow roof deck over it. The ABE calculation was revisited and revised having no effect on the building design.

Removal of Roof Decks off Master Suite: Both roof decks off the Master Bedroom have been removed and replaced with conventional sloped roofs on both sides. Windows replace the doors and are egress compliant.

Seasonal Storage in the Crawl Space: Due to the nature of the shoring there is an extraordinarily tall crawl space. An area to store furniture and other seasonal items has been created off the Lounge Area deck. The full height door will also act as the crawl space access. The platform has been designed by the structural engineer. This area will be sprinkled as requested by MIFD.